CLAIMS

WHAT IS CLAIMED IS:

1. A method for hermetically sealing a package comprising:

applying a light or energy active resist to a fill port, said resist acting as a temporary hermetic seal;

patterning said resist; and

applying a solder to said fill port;

wherein said solder is configured to serve as a hermetic seal.

2. The method of claim 1, wherein said package comprises a fluid filled package.

3. The method of claim 2, wherein said fluid filled package comprises one of a micro-electro mechanical system (MEMS) package or a micro-electro-optical mechanical system (MEOMS) package.

4. The method of claim 1, wherein said resist comprises a negative photo resist.

5. The method of claim 1, wherein said resist comprises a positive photo resist.

6. The method of claim 1, wherein said resist comprises a chemical-amplified resist (CAR).

7. The method of claim 1, wherein said patterning comprises a photolithographic process.

8. The method of claim 7, wherein said patterning said resist comprises:

selectively exposing said resist to a light or energy source; and

developing said resist.

9. The method of claim 8, wherein said patterning is performed by one of an extreme ultraviolet lithography (EUV), an x-ray lithography (XRL), an electron beam lithography, or an ion beam lithography and an appropriate resist.

10. The method of claim 1, wherein said patterning said resist further comprises:

introducing said resist to a developing solution for a time sufficient to leave a quantity of unexposed resist in said fill port;

wherein said quantity of unexposed resist is configured to serve as a temporary plug before said solder is applied.

11. The method of claim 10, wherein said quantity of unexposed resist is further configured to act as a thermal barrier during said application of said solder.

12. The method of claim 1, wherein said patterning said resist further comprises exposing and developing said resist to form a ring of developed resist configured to guide said solder into said fill port.

13. The method of claim 1, further comprising controlling said method in response to a system computation.

14. The method of claim 13, wherein said system computation aids or entirely regulates a decision making process for controllably sealing said package.

15. A method for temporarily sealing an integrated circuit (IC) package comprising applying a light or energy active resist to a fill port, said resist temporarily sealing said package.

16. The method of claim 15, wherein said IC package comprises a fluid filled package.

17. The method of claim 15, wherein said photo resist comprises one of a negative photo resist, a positive photo resist, or a chemical-amplified resist (CAR).

18. The method of claim 15, further comprising patterning said resist.

19. The method of claim 18, wherein said patterning comprises a photolithographic process.

20. The method of claim 19, wherein said patterning said photo resist comprises:

selectively exposing said photo resist to a light or energy source; and

developing said photo resist.

21. The method of claim 20, wherein said patterning is performed by one of an extreme ultraviolet lithography (EUV), an x-ray lithography (XRL), an electron beam lithography, or an ion beam lithography and an appropriate resist.

22. The method of claim 18, wherein said patterning said resist further comprises:

developing said resist to expose a location configured to receive a permanent hermetic seal;

wherein said developing is performed for a time sufficient to leave a quantity of resist in said fill port;

wherein said quantity of resist is configured to serve as a temporary hermetic plug in said fill port.

23. The method of claim 22, wherein said quantity of resist is further configured to function as a thermal barrier during said application of said solder.

24. The method of claim 18, wherein said patterning said resist further comprises exposing and developing said resist to form a ring of developed resist configured to guide a hermetic seal into said fill port.

25. A method for hermetically sealing a Micro-Electro Mechanical System (MEMS) package or a micro-electro-optical mechanical system (MEOMS) package comprising:

applying a light or energy active resist to a fill port of said package, said resist acting as a temporary hermetic seal;

patterning said resist; and

applying a solder to said fill port;

wherein said solder is configured to serve as a hermetic seal.

26. The method of claim 25, wherein said MEMS or MEOMS package comprises a fluid filled package.

27. The method of claim 25, wherein said resist comprises one of a negative photo resist, a positive photo resist, or a chemical-amplified resist (CAR).

28. The method of claim 25, wherein said patterning said resist comprises:

selectively exposing said resist to a light or energy source; and

developing said resist.

29. The method of claim 28, wherein said developing said resist comprises:

introducing said resist to a developing solution for a time sufficient to leave a quantity of resist in said fill port;

wherein said quantity of resist is configured to serve as a temporary plug before said solder is applied to said fill port.

30. The method of claim 29, wherein said resist is configured to thermally protect said package during said application of solder in said fill port.

31. An integrated circuit (IC) package, wherein said IC package was formed by:

sealing a fill port with a light or energy active resist;

patterning said resist; and

hermetically sealing said fill port with a solder;

wherein a portion of said resist remains in said IC package.

32. The package of claim 31, wherein:

said resist comprises a photo resist; and

said patterning said resist comprises a photolithographic process.

33. The package of claim 32, wherein said photo resist comprises one of a negative photo resist or a positive photo resist.

34. The package of claim 33, wherein said sealing a fill port with a light or energy active resist comprises disposing said resist in said fill port such that said resist is in intimate contact with said packaging fluid.

35. The package of claim 34, wherein said photolithographic process removes a portion of said photo resist sufficient to exposes a surface of a fill port channel or a fill port pad;

wherein said solder hermetically seals to said surface.

36. The package of claim 31, further comprising:

a ring disposed around said fill port;

wherein said ring is exposed resist configured to aid in an application of said solder.

37. A system for hermetically sealing an integrated circuit (IC) package comprising:

a resist dispenser;

an energy source;

a mask communicatively coupled to said energy source;

a developer;

a solder dispenser; and

a solder reflow device;

wherein said resist dispenser, said energy source, said mask, and said developer are configured to perform a photolithography process.

38. The system of claim 37, wherein said resist dispenser is configured to dispense a photo resist into a fill port channel such that said photo resist is in intimate contact with a packaging fluid.

39. The system of claim 38, wherein said mask is configured to selectively expose said photo resist with a quantity of energy emitted by said energy source.

40. The system of claim 39, wherein said developer is configured to leave a plug of said photo resist in said fill port channel.

41. The system of claim 37, further comprising a computing device communicatively coupled to said system, wherein said computing device is configured to control an operation of said system.

42. A system for hermetically sealing an integrated circuit (IC) package comprising:

a means for applying a light or energy active resist to a fill port;

a means for patterning said resist;

a means for applying a solder to said fill port; and

a means for re-flowing said solder;

wherein said means for patterning said resist is configured to remove a sufficient quantity of said resist to facilitate the application of said solder to form a hermetic seal on said fill port.

43. The system of claim 42, wherein said means for patterning said resist comprises a photolithography technique.

44. The system of claim 43, wherein said means for patterning said resist further comprises means for leaving a portion of said resist in said fill port channel to act as a temporary hermetic seal prior to an application of said solder.

45. The system of claim 44, further comprising a computing device communicatively coupled to said system.

46. The system of claim 45, further comprising a conveyer belt or a number of robotic arms controllably coupled to said computing device;

wherein said conveyer belt or said number of robotic arms are configured to manipulate said IC package, a photo resist dispenser, a photolithography mask, a solder dispenser, a resist developer, or a solder reflow device.

47. A hermetically sealed package comprising:

an inner enclosure;

a fill port channel coupling said inner enclosure to an atmosphere;

a quantity of resist disposed in said fill port channel; and

a quantity of solder disposed in said fill port channel, wherein said quantity of solder hermetically seals said inner enclosure.

48. The hermetically sealed package of claim 47, further comprising a quantity of fluid disposed in said inner enclosure.

49. The hermetically sealed package of claim 48, wherein said quantity of resist is configured to insulate said fluid during an application of said quantity of solder.

50. The hermetically sealed package of claim 47, further comprising a micro-electro mechanical system (MEMS) or a micro-electro-optical mechanical system (MEOMS) disposed in said inner enclosure.

51. The hermetically sealed package of claim 47, further comprising a ring of resist disposed on said package around said fill port channel;

wherein said ring of resist is configured to guide said quantity of solder into said fill port channel.

52. The hermetically sealed package of claim 47, wherein said quantity of resist comprises one of a negative photo resist or a positive photo resist.

53. A hermetically sealed micro-electro mechanical system (MEMS) package comprising:

an inner enclosure;

a MEMS disposed in said inner enclosure;

a fill port channel coupling said inner enclosure to an atmosphere;

a quantity of resist disposed in said fill port channel; and

a quantity of solder disposed in said fill port channel, wherein said quantity of solder hermetically seals said inner enclosure.

54. The hermetically sealed MEMS package of claim 53, further comprising a filling fluid disposed in said inner enclosure.

55. A hermetically sealed package comprising:

a means for enclosing an integrated circuit or a MEMS;

a means for channeling a fluid into said means for enclosing;

a quantity of resist disposed in said means for channeling; and

a means for hermetically sealing a channel disposed in said means for channeling, wherein said means for hermetically sealing hermetically seals said means for enclosing.

56. The hermetically sealed package of claim 55, further comprising a quantity of fluid disposed in said means for enclosing an integrated circuit or a MEMS.

57. The hermetically sealed package of claim 56, wherein said quantity of resist is configured to insulate said fluid during an application of said means for hermetically sealing.

58. The hermetically sealed package of claim 55, further comprising a micro-electro mechanical system (MEMS) or a micro-electro-optical mechanical system (MEOMS) disposed in said means for enclosing.

59. The hermetically sealed package of claim 55, further comprising a ring of resist disposed on said package around said means for channeling;

wherein said ring of resist is configured to guide said means for hermetically sealing into said means for channeling.

60. The hermetically sealed package of claim 55, wherein said quantity of resist comprises one of a negative photo resist or a positive photo resist.

61. The hermetically sealed package of claim 55, wherein said means for hermetically sealing a channel comprises a quantity of solder.